

bus corollis rubris.

This variety differs from the typical form and other varieties of the species in having the branches and branchlets merely very shortly appressed-pilose with antrorse hairs, the rachis, bracts, and calyxes merely puberulent, the lower leaf-surfaces densely short-pubescent, and the corollas red.

The type of the variety was collected by Scott Mori (in whose honor it is named), T. S. dos Santos, A. Euponino, and C. B. Thompson (no. 10892) near Santa Cruz de Cabralia, 2—4 km. southwards along the old road in the region of Cacaueira da Bahia, Bahia, Brazil, growing in an area of campos and restinga, on August 21, 1978, and is deposited in my personal herbarium. The collectors describe the corollas as red ("roxas") and report the vernacular name, "canela de saracura".

VERBENA TENERA f. **ALBIFLORA** (Kuntze) Mold., stat. nov.

Verbena tenera var. albiflora Kuntze, Rev. Gen. Pl. 3 (2): 258. 1898.

ADDITIONAL NOTES ON THE ERIOCAULACEAE. LXXXII

Harold N. Moldenke

ERIOCAULON PLUMALE N. E. Br.

Additional bibliography: Moldenke, Phytologia 41: 430. 1979.

Meikle (1968) feels that E. rufum Lecomte is a species distinct from E. plumale.

ERIOCAULON PLUMALE ssp. **JAEGERI** (Moldenke) Meikle

Additional & emended bibliography: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 60, & 62, fig. 337/7. 1968; Moldenke, Phytologia 26: 462. 1973.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 60, fig. 337/7. 1968.

Meikle (1968) characterizes this plant as having "Scapes and leaves numerous; leaves subulate-filiform; capitula white, plumose, 5—7 mm. diam., subglobose; involucre bracts rather rigid, dark brown", citing Adames 342, Chillou 906, Jaeger 4917, and Schnell 7393 from Guinea, flowering in September and October.

ERIOCAULON PLUMALE ssp. **KINDIAE** (H. Lecomte) Meikle

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 326. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 60, & 62, fig. 337/8. 1968; Moldenke, Phytologia 26: 462. 1973.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 60, fig. 337/8. 1968.

Meikle (1968) includes in the synonymy of this subspecies "E. pumilum of F.W.T.A., ed. 1, 2: 326, partly, not of Afzel. ex Koern.", characterizing the subspecies as having "Scapes and leaves numerous; leaves subulate-filiform; capitula hemispherical, 3--5 mm. diam., white, plumose, said to be fragrant; involucre bracts pale brown or greenish, not rigid". He cites the following collections: GUINEA: Boissmaré 385 [Herb. Chillou 3903], Chillou 716, 717; Pobéguin 1359. SIERRA LEONE: Adames s.n. [Herb. Jordan 554]; Harvey 33; Jordan 303, 554; Melville & Hooker 276. He lists it also from Chad.

ERIOCAULON POLYCEPHALUM Hook. f.

Additional bibliography: Moldenke, Phytologia 34: 487. 1976.

Recent collectors describe the inflorescence of this plant as grayish-white and have found it growing "many together in open boggy places on sandstone in rather dense vegetation", at 1200 m. altitude.

Additional citations: THAILAND: Beusekom & Charoenpol 1711 (Ac).

ERIOCAULON PULCHELLUM Körn.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 326. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57, 61, 62, & 64, fig. 338/25. 1968; Moldenke, Phytologia 34: 487. 1976.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 61, fig. 338/25. 1968.

Meikle (1968) lists "E. heterochiton Lecomte in Bull. Soc. Bot. Fr. 55: 647 (1909), partly, incl. Chev. 18770a, not of Koern." in the synonymy of E. pulchellum. He also avers that the "E. pumilum of F.T.W.A., ed. 1, 2: 326, partly, not of Afzel. ex Koern." is E. plumale ssp. kindiae (H. Lecomte) Meikle". He characterizes E. pulchellum as "Very slender, usually less than 2 1/2 in. high; leaves numerous, narrowly subulate; capitula to about 5 mm. diam. with conspicuous, white, radiating involucre bracts." He cites the following collections: MALI: Garnier s.n. GUINEA: Adames 329; Baldwin 9800; Boissmaré 376 [Herb. Chillou 3894], 408 [Herb. Chillou 3926], Chevalier 18770a; Schnell 6814, 7373. SIERRA LEONE: Afzelius s.n.; Deighton 1306; Glanville 21; Harvey 135; Jaeger 7600; T. S. Jones 99; Jordan 504, 2160; Marmo 31; Melville & Hooker 277; Thomas 2976. LIBERIA: Adames 708; Baldwin 9176; Harley 1679. It has been found in flower from August to November and in January.

ERIOCAULON QUINQUANGULARE L.

Additional & emended bibliography: Haines, Bot. Bihar & Orissa, ed. 1, 6: 1066 & 1068—1069 (1924) and ed. 2, 3: 1114 & 1116--1117. 1961; Hocking, Excerpt. Bot. A.25: 379. 1975; Srivastava, Fl. Gorak. 331. 1976; Moldenke, Phytologia 36: 487. 1977.

Raju refers to this plant as "psamophytic on sandy dunes, erect annual," found it growing at sealevel, and mistook it for E. xeranthemum Mart. Srivastava (1976) reports E. quinquangulare as found abundantly "in paddy crops and in other swampy localities" in India, citing his no. 1434. Cramer describes it as an annual, the "stems" [peduncles] 5-angular, and the inflorescences "ashy-white". He states that it "grows in association with Dopatrium nudicaule in soggy ground among short grass, common and abundant" at sealevel, in Sri Lanka, flowering in February.

The Latz 3703, distributed as E. quinquangulare in some herbaria, actually seems to be E. schultzei Benth.

Additional citations: INDIA: Andhra Pradesh: Raju 614 (N). SRI LANKA: Cramer 5096 (N); Koyama 13315 (W--2875485); Wirawan & Fosberg 1026 (N).

ERIOCAULON QUINQUANGULARE var. ELATIUS Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.25: 379. 1975; Moldenke, Phytologia 33: 10. 1976.

ERIOCAULON QUINQUANGULARE var. MARTIANUM Wall.

Additional bibliography: Hocking, Excerpt. Bot. A.25: 379. 1975; Moldenke, Phytologia 34: 488. 1976.

ERIOCAULON RAVENELII Chapm.

Additional bibliography: Moldenke, Phytologia 36: 487 (1977) and 37: 24. 1977.

Additional citations: FLORIDA: Lee Co.: R. Kral 22923 (Au--245571, Ld). Levy Co.: R. Kral 22940 (Au--245610, Ld). Martin Co.: Godfrey 65625 (Ld).

ERIOCAULON REMOTUM H. Lecomte

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 326. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57, 61, & 64, fig. 338/24. 1968; Moldenke, Phytologia 26: 462. 1973.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 61, fig. 338/24. 1968.

Meikle (1968) includes in the synonymy of this species "E. heterochiton Lecomte in Bull. Soc. Bot. Fr. 55: 647 (1909) partly, incl. Chev. 18770, not of Koern." and characterizes the species as having "Scapes rather numerous, usually less than 1 1/4 in. high; leaves relatively broad and opaque; capitula 3--4 mm. diam., fuscous, subglobose at maturity; involucre bracts conspicuous,

stramineous, blunt". He cites the following collections at Kew: GUINEA: Chevalier 18770, 18810; Pitot s.n.; Schnell 7372. SIERRA LEONE: Deighton 2178. It has been found in anthesis in October.

ERIOCAULON ROBUSTO-BROWNIANUM Ruhl.

Additional bibliography: Fedde & Schust., Justs Bot. Jahresber. 42: 12. 1920; Moldenke, Phytologia 36: 488. 1977.

ERIOCAULON ROLLANDII Rousseau

Additional bibliography: Moldenke, Phytologia 36: 488. 1977; Scoggan, Fl. Canada 2: 459. 1978.

It is interesting that Boivin & Cayouette regard this taxon as a variety of E. pellucidum, Lepage regards it a form of that species [all using the epithet "septangulare" for it and intending the Old World E. aquaticum thereby], while Scoggan (1978) reduces it to synonymy under E. parkeri. Obviously it is a puzzling taxon.

ERIOCAULON RUFUM H. Lecomte, Bull. Soc. Bot. France 55: 644. 1909.

Bibliography: H. Lecomte, Bull. Soc. Bot. France 55: 644. 1909; Prain, Ind. Kew. Suppl. 4, imp. 1, 82. 1913; Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 327. 1931; Prain, Ind. Kew. Suppl. 4, imp. 2, 82. 1938; Moldenke, Known Geogr. Distrib. Erioc. 39. 1946; Moldenke, Résumé 292. 1959; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 59, & 62, fig. 336/5. 1968; Moldenke, Phytologia 18: 393. 1969; Moldenke, Fifth Summ. 2: 511. 1971; Hepper in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 540. 1972; Moldenke, Phytologia 41: 430. 1979.

Illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 59, fig. 336/5. 1968.

Although Hutchinson & Dalziel (1931) regarded this species as a synonym of E. plumale N. E. Br., Meikle (1968) has shown it to be distinct from that taxon and gives "E. plumale of F.W.T.A., ed. 1, 2: 327 partly, not of N. E. Br." in its synonymy. He characterizes it as being "Strictly erect; scapes usually numerous; capitula globose to 10 mm. diam., florets generally concealing involucre bracts in fully developed capitula." He cites the following collections at Kew: GUINEA: Arrieu 230 [Herb. Chillou 3139]; Jacques-Félix 7256; Macclaud s.n.; Pobéguin 1312. SIERRA LEONE: King 55b. It has been found in anthesis from October to December and in February.

ERIOCAULON SANTAPAU Moldenke

Additional bibliography: Moldenke, Phytologia 25: 70. 1972.

Raju describes this species as an annual herb, with many small scapes, and rare -- "a few plants scattered among grasses on a sandy river island", at 100 m. altitude.

Additional citations: INDIA: Andhra Pradesh: V. S. Raju 685d (2).

ERIOCAULON SCHIEDEANUM Körn.

Additional bibliography: Spellman, Dwyer, & Davidse, *Rhodora* 77: 124. 1975; Moldenke, *Phytologia* 33: 11. 1976.

Spellman and his associates (1975) record this species from Belize, but this seems most doubtful; re-examination of the material will probably show that this record is based on a misidentification.

ERIOCAULON SCHIPPII Standl.

Additional bibliography: Spellman, Dwyer, & Davidse, *Rhodora* 77: 124. 1975; Moldenke, *Phytologia* 29: 224. 1974.

ERIOCAULON SCHULTZII Benth.

Additional bibliography: Moldenke, *Phytologia* 34: 489 (1976) and 41: 415 & 425. 1979.

The Latz 3703, cited below, was previously reported by me in this series of notes as E. lividum F. Muell. Miss Sheila S. Hooper, at Kew, in a letter to me dated July 11, 1977, writes of it: "E. schultzii Benth. or near. The leaves are broader than in the type which resembles the Chippendale specimen in that respect. The large cells of the floral bracts give it a strong superficial resemblance to E. lividum but that species has large keeled sepals to the female flowers." It was originally distributed as "E. quinquangulare L. sens. lat." and is described by the collector as an "erect ephemeral, heads white, rare in damp clayey loam in mixed grassland fringing lagoon". It was found in flower and fruit in May. Dunlop encountered it in drainage flats with gray silty clay surface soil, flowering and fruiting in August.

The C. Dunlop 3388, reported as E. schultzii by me in 1976, actually seems to be E. cinereum R. Br.

Additional citations: AUSTRALIA: Northern Territory: C. Dunlop 3457 (Z); Latz 3703 (Z).

ERIOCAULON SELLOWIANUM Kunth

Additional bibliography: Moldenke, *Phytologia* 36: 489--490. 1977.

Shepherd and his associates encountered this plant in brejo (wet sedge meadow), flowering in November. Their collection does not match well other collections of this taxon.

Additional citations: BRAZIL: Goiás: Shepherd, Andrade, Kino-shita, & Tamashiro 3756 (N, N).

ERIOCAULON SELLOWIANUM var. **PARANENSE** (Moldenke) Moldenke & Smith

Additional bibliography: Moldenke, *Phytologia* 36: 489--490. 1977.

Additional citations: BRAZIL: Santa Catarina: Smith & Klein 13632 (Au-249995).

ERIOCAULON SESSILE Meikle

Synonymy: Eriocaulon diaguissense Bourdu, Bull. Soc. Bot.

France 104: 156—158, fig. A—F. 1957.

Additional & emended bibliography: Bourdu, Bull. Soc. Bot.

France 104: 156—158, fig. A—F. 1957; Anon., Assoc. Étud. Taxon.

Fl. Afr. Trop. Index 1957: 33. 1958; Jacques-Félix, Excerpt. Bot.

A.1: 72. 1959; Moldenke, Résumé 426 & 480. 1959; Moldenke, Résumé

Suppl. 1: 8. 1959; G. Taylor, Ind. Kew. Suppl. 13: 52. 1966;

Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57, 60,

& 64, fig. 337/27. 1968; Moldenke, Phytologia 18: 51 (1968), 19:

34—35 (1968), and 20: 405. 1970; Moldenke, Fifth Summ. 1: 216

(1971) and 2: 934. 1971; Hepper in Hutchins. & Dalz., Fl. W. Trop.

Afr., ed. 2, 3: 540. 1972; Moldenke, Phytologia 24: 355 (1972),

26: 464 (1973), and 41: 420. 1979.

Additional & emended illustrations: Bourdu, Bull. Soc. Bot.

France 104: 157, fig. A—F. 1957; Meikle in Hutchins. & Dalz., Fl.

W. Trop. Afr., ed. 2, 3: 60, fig. 337/27. 1968.

Meikle (1968) characterizes this species as "A remarkable dwarf, less than 1 cm. high; the capitula sessile and forming a central 'disk' surrounded by numerous, narrowly subulate, often reddish, leaves", citing only Des Abbayes 777 from Guinea at Kew, but listing it also from the Central African Empire. It has been found in anthesis in October.

ERIOCAULON SETACEUM L.

Additional & emended bibliography: Haines, Bot. Bihar & Orissa, ed. 1, 6: 1066 & 1067 (1924) and ed. 2, 3: 1114 & 1115.

1961; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3:

58, 60, & 62, fig. 337/9. 1968; Hocking, Excerpt. Bot. A.25: 379.

1975; Moldenke, Biol. Abstr. 64: 686. 1977; Moldenke, Phytologia

36: 490 (1977) and 41: 414 & 424. 1979.

Recent collectors describe this whole plant as "pale-green" and have found it growing near the edge of ponds in moist evergreen forests and submerged in the water of the ponds, the inflorescence protruding above the water surface, at 650—1200 m. altitude.

Additional citations: THAILAND: Beusekom & Charoenpol 1770 (Ac); Beusekom & Smitinand 1783 (Ac).

ERIOCAULON SETACEUM var. **CAPILLUS-NAIADIS** (Hook. f.) Moldenke

Additional & emended bibliography: Haines, Bot. Bihar & Orissa, ed. 1, 6: 1067 (1924) and ed. 2, 3: 1115. 1961; Hocking, Ex-

cerpt. Bot. A.25: 379. 1975; Moldenke, Phytologia 36: 490. 1977.

In Sri Lanka this plant is known as "pedakokmota" and "penda" in Sinhalese.

ERIOCAULON SETICUSPE Ohwi

Additional bibliography: Moldenke, Phytologia 34: 490. 1976.

Nomura found this plant scattered in very shallow water at the

margin of a large pond in what he says is the type locality, at 100 meters altitude, flowering and fruiting in October.

Additional citations: JAPAN: Kyushu: Nomura 13011 (N).

ERIOCAULON SEXANGULARE L.

Additional bibliography: Fedde & Schust., Justs Bot. Jahresber. 42: 13. 1920; Moldenke, Phytologia 36: 472 & 490 (1977), 37: 422 & 423 (1977), and 38: 47. 1977; B. C. Stone, Henderson's Malay. Wild Fls. Append. 23. 1977; Satake, Journ. Jap. Bot. 53: 110. 1978; Scoggan, Fl. Canada 2: 459. 1978; Moldenke, Phytologia 41: 430. 1979.

Recent collectors describe this plant as having "leaves and stems green, heads gray", and have found it growing in slow-moving permanent water and in open wet marshy areas, at 25--850 meters altitude, flowering in June and December, fruiting in December. Scoggan (1978) notes that the "E. sexangulare" reported from Canada by early writers is a misidentification for E. pellucidum Michx.

Additional citations: SRI LANKA: Hepper, Maxwell, & Fernando 4566 (N); Sohmer & Waas 10226 (N). THAILAND: Larsen, Larsen, Nielsen, & Santisuk 31091 (N), 32318 (N).

ERIOCAULON SMITINANDI Moldenke

Additional bibliography: Moldenke, Phytologia 34: 492 (1976) and 41: 420. 1979.

Recent collectors describe this plant as "light-green", the "flowers gray-whitish", and have found it to be "common on moist impervious hardpan" in association with E. echinulatum Mart., at 400 meters altitude.

Additional citations: THAILAND: Beusekom & Smitinand 2142 (Ac).

ERIOCAULON SOLLYANUM Royle

Additional & emended bibliography: Haines, Bot. Bihar & Orissa, ed. 1, 6: 1066 & 1068 (1924) and ed. 2, 3: 1114 & 1116. 1961; Moldenke, Phytologia 36: 491. 1977.

ERIOCAULON SOLLYANUM var. SUMATRANUM Van Royen

Additional bibliography: Moldenke, Phytologia 34: 492--493. (1976) and 36: 38. 1977.

Recent collectors describe this plant as a common erect herb to 60 cm. tall, the leaves fleshy and dark-green, the "heads ash-white with pale-brown bracts" and have encountered it in swampy sedge-grassland dominated by Rynchospora rubiginosa and Miscanthus floridulus, at 1550 meters altitude, flowering in December. Material has been misidentified and distributed in some herbaria as "E. hookeriana var. hookeriana".

Additional citations: NEW GUINEA: Territory of New Guinea: Barker & Vinas LAE.67725 (Mu).

ERIOCAULON SPECTABILE F. Muell.

Additional bibliography: Moldenke, *Phytologia* 33: 15. 1976.

The G. C. Taylor 92, cited below, is placed here very tentatively; it is far too immature to allow accurate identification and does not closely resemble other material identified as this species. Miss Shiela Hooper, at Kew, writes of it in a letter to me dated July 11, 1977: "very young and I cannot make out the floral structure. The stiff pink-tinged leaves look distinctive but I cannot match it except in E. spectabile which appears a much larger plant. E. nanum has similar small heads with gray floral bracts."

Additional citations: AUSTRALIA: Northern Territory: G. C. Taylor 92 [Herb. North. Terr. 33657] (2).

ERIOCAULON STEYERMARKII Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 36: 491. 1977.

ERIOCAULON STEYERMARKII var. **BAHIENSE** Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 33: 16. 1976.

ERIOCAULON STRICTUM Milne-Redhead

Additional & emended bibliography: Meikle in Hutchins. & Dalz., *Fl. W. Trop. Afr.*, ed. 2, 3: 63. 1968; Moldenke, *Phytologia* 36: 491 (1977) and 41: 426. 1979.

Meikle (1968) avers that this species is closely related to E. maculatum Schinz and E. fulvum N. E. Br.

ERIOCAULON TAKAE Koidz.

Additional bibliography: Fedde & Schust., *Justs Bot. Jahresber.* 41: 13. 1916; Koidz., *Feddes Repert. Spec. Nov.* 15: 174. 1918; Fedde & Schust., *Justs Bot. Jahresber.* 42: 12. 1920; Moldenke, *Phytologia* 25: 81. 1972.

ERIOCAULON TENUIFOLIUM Klotzsch

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 36: 491. 1977.

ERIOCAULON TENUIFOLIUM f. **VIVIPARUM** Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 33: 16—17. 1976.

ERIOCAULON TEUSCZII Engl. & Ruhl.

Additional bibliography: Hutchins. & Dalz., *Fl. W. Trop. Afr.*, ed. 1, 2: 326 & 327. 1931; Moldenke, *Phytologia* 29: 233 (1974), 38: 26 & 131 (1977), and 41: 422. 1979.

Hutchinson & Dalziel characterize this plant as having "Peduncles

elongated from a small tuft of leaves; sheaths about 6 cm. long; heads white" and cite only Lely 283 at Kew from Northern Nigeria, flowering in June, commenting "Also is East tropical Africa, Rhodesia and Angola".

ERIOCAULON TEXENSE Körn.

Additional synonymy: Eriocaulon texense Horn, in herb.

Additional bibliography: Moldenke, Phytologia 36: 491 (1977) and 41: 419. 1979.

Recent collectors have encountered this species in cleared boggy areas, in seepage areas with pitcherplants, and "frequent in marshy areas with scattered trees and hillside seepage from springs", flowering in June, the flowers described as "white".

Material of E. texense has been misidentified and distributed in some herbaria as Lachnocaulon anceps (Walt.) Morong. On the other hand, the McCaleb 92 and Waddle 298, distributed as E. texense, actually are E. decangulare var. minor Moldenke, while Webster & Rowell 1903 is E. decangulare f. parviceps Moldenke.

Additional citations: ALABAMA: R. Kral 35200 (N). LOUISIANA: Beauregard Par.: R. Kral 20158 (Au--245569, Ld); Kral & Ricks 16992 (Au--245578). Vernon Par.: R. Kral 20078 (Au--245576); Kral & Ricks 16772 (Au--245577); Thieret 32862 (Ld). TEXAS: Henderson Co.: Correll, Correll, & Crutchfield 30952 (Ld). Jasper Co.: Nixon & Chambless 1817 (Ld).

ERIOCAULON THWAITESII Körn.

Additional & emended bibliography: Thwaites & Hook. f., Enum. Pl. Zeyl., imp. 1, 341. 1864; Fedde & Schust., Justs Bot. Jahresber. 42: 12. 1920; Thwaites & Hook. f., Enum. Pl. Zeyl., imp. 2, 341. 1964; Moldenke, Phytologia 36: 475 & 492. 1977.

Waas describes this species as an herb, 15 cm. tall, with white flower-heads, and found it growing in secondary forest edges near a stream, at 4400 feet altitude, flowering and fruiting in January.

Additional citations: SRI LANKA: Waas 1000 (W--2801942).

ERIOCAULON TOGOENSE Moldenke

Additional synonymy: Eriocaulon togoense Moldenke ex Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 61, fig. 338/22. 1968.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 326. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57, 61, & 63, fig. 338/22. 1968; Moldenke, Phytologia 29: 234 (1974) and 38: 183. 1978.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 61, fig. 338/22. 1968.

Meikle (1968) characterizes this species as a "Neat tufted annual, usually less than 2 1/2 in. high; scapes numerous; capitula 5--8 mm. diam. with conspicuous whitish involucre bracts", citing

the following collections at Kew: MALI: Raynal 5306 quinto. IV-ORY COAST: Aké Assi 7243; De Wit 7901 sub 545. GHANA: Adames 4400; Hall CC.92; Morton GC.9582. TOGO: Schroeder 155, 162. NIGERIA: Northern: Barter 7781; Daley FHL.32294; Meikle 703; Parsons L.1021; Philcox 167. Southern: Stanfield 57, 117. It has been found in flower in August and from October to January.

ERIOCAULON TRANSVAALICUM N. E. Br.

Additional & emended bibliography: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 59, & 63, fig. 336/11. 1968; Moldenke, Phytologia 29: 234 (1974) and 38: 131. 1977.

ERIOCAULON TRANSVAALICUM var. HANNINGTONII (N. E. Br.) Meikle

Additional synonymy: Eriocaulon monodii Moldenke, Phytologia 3: 165--166. 1949.

Additional & emended bibliography: Moldenke, Phytologia 3: 165--166 (1949) and 3: 335. 1950; Monod, Bull. Inst. Fr. Afr. Noir 16: 316. 1954; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 59, & 63, fig. 336/11. 1968; Moldenke, Phytologia 18: 319--320 (1969), 24: 480 (1972), 29: 195 & 234--235 (1974), and 41: 427. 1979

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 59, fig. 336/11. 1968.

Meikle (1968) characterizes this plant as having "Scapes numerous, capitula subglobose, about 4 mm. diam., involucre bracts pale brown", citing only at Kew Monod s.n. from Mali, commenting "Also in Tanzania and Mozambique; typical E. transvaalicum is widespread in tropical Africa outside our area". It has been found in flower in December.

ERIOCAULON TRUNCATUM Hamilt.

Additional & emended bibliography: Haines, Bot. Bihar & Orissa, ed. 1, 6: 1067 & 1070. 1924; Bond, Wild Fls. Ceyl. Hills xiii, 232, 233, & 239, pl. 120. 1953; Haines, Bot. Bihar & Orissa, ed. 2, 3: 1115 & 1118. 1961; Moldenke, Phytologia 36: 492. 1977; B. C. Stone, Henderson's Malay. Wild Fls. Append. 23. 1977.

Emended illustrations: Bond, Wild Fls. Ceyl. Hills 233, pl. 120. 1953.

Maxwell describes this plant as having the "inflorescence bracts and flower bracts gray, leaves and scape green" and found it growing in a few cm. of water over a sand-silt bottom, at 25 meters altitude, flowering and fruiting in December. Thwaites (1864) asserts that the species is very common in Sri Lanka, where Bond (1953) says that it occurs "in swampy ground up to the highest elevations, in flower most of the year".

Additional citations: MALAYA: Singapore: Maxwell 76-794 (Ac).

ERIOCAULON WALKERI Hook. f.

Additional bibliography: Moldenke, *Phytologia* 36: 487 & 493. 1977.

Thwaites (1864) asserts that this species is abundant on paddy borders in Sri Lanka.

Additional citations: SRI LANKA: Jayasuriya 2105 (N).

ERIOCAULON WIGHTIANUM Mart.

Additional bibliography: Moldenke, *Phytologia* 33: 19. 1976.

Recent collectors report this species "local on moist impervious hardpan" at 400 m. altitude, in Thailand, while Raju refers to it as an annual herb, with many scapes, white flower-heads, and broad leaves, found in wet places in cultivated rice fields after the crop was cut.

Additional citations: INDIA: Andhra Pradesh: V. S. Raju 675b (Ld). THAILAND: Beusekom & Smitinand 2158 (Ac).

ERIOCAULON WILLDENOVIANUM Moldenke

Emended synonymy: Eriocaulon longifolium "Nees ex Kunth" apud Abeywickrama, Ceyl. Journ. Sci. Biol. 2: 141. 1959.

Additional bibliography: Hocking, *Excerpt. Bot. A.25*: 379. 1975; Moldenke, *Phytologia* 36: 472, 490, & 493. 1977; Moldenke, *Biol. Abstr.* 65: 78. 1978.

Recent collectors refer to this species as a "light-green" herb with gray or white flower-heads and found it to be locally frequent on moist impervious hardpan, as well as at the edges of drying-out waterholes, at 400 m. altitude, flowering in November.

Additional citations: SRI LANKA: Waas 923 (W--2769016). THAILAND: Beusekom & Smitinand 2145 (Ac).

ERIOCAULON WILLDENOVIANUM var. **FERGUSONII** Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.25*: 379. 1975; Moldenke, *Phytologia* 29: 238--239. 1974.

ERIOCAULON XENOPODION T. Koyama

Additional bibliography: Moldenke, *Phytologia* 34: 496. 1976.

Maxwell describes this plant as having "bracts tan, heads whitish with black corollas" and encountered it as an erect herb in wet sandy-muddy marshes on savannas, at 550 m. altitude, flowering and fruiting in August.

Additional citations: THAILAND: Maxwell 76-544 (Ac).

ERIOCAULON XERANTHEMUM Mart.

Additional & emended bibliography: Haines, *Bot. Bihar & Orissa*, ed. 1, 6: 1067 & 1070 (1924) and ed. 2, 3: 1115 & 1118. 1961; Moldenke, *Phytologia* 34: 496. 1976.

It is worth noting that Haines (1924, 1961) still follows Hooker in placing E. xeranthemoides Van Heurck & Muell.-Arg. in the synonymy of E. xeranthemum, but that African taxon is now

known as E. togoense Moldenke.

The Raju 614, distributed as possibly E. xeranthemum, actually is E. quinquangulare L.

ERIOCAULON ZAMBESIENSE Ruhl.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 326 & 327. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 58, 59, & 62, fig. 336/1. 1968; Moldenke, Phytologia 29: 195, 235, & 239. 1974.

Emended illustrations: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 59, fig. 336/1. 1968.

Meikle (1968) characterizes this species as having "Peduncles up to 2 ft. 8 in. high; capitula 5—8 mm. diam., covered with whitish papillae, generally viviparous", citing the following collections at Kew: CAMEROONS: Brunt 1092; Hepper 2021; Maitland 1400.

FERNANDO PO: Monod 10358. It has been found in flower in February, April, June, and December. Meikle notes that "The specimen from F. Po closely resembles typical E. zambesiense, but those from W. Cam[eroons] are altogether more robust, with very broad and blunt leaves, up to 1.5 cm. wide at the base".

ERIOCAULON ZOLLINGERIANUM Körn.

Additional bibliography: Moldenke, Phytologia 34: 496—497. 1976.

Recent collectors have found this plant growing in open wet places along roadsides in disturbed evergreen forests on moist impervious hardpan, at 400 meters altitude, flowering in November, and describe it as light-green, the heads "globose to barrel-shaped, yellowish".

Additional citations: THAILAND: Beusekom & Smitinand 2130 (Ac).

LACHNOCAULON Kunth

Additional bibliography: Hocking, Excerpt. Bot. A.25: 378.

1975; Kral, Rhodora 78: 444. 1976; Batson, Gen. East. Pl. 40 & 195. 1977; Lelong, Sida 7: 127. 1977; Moldenke, Biol. Abstr. 63: 3041 & 6590. 1977; Moldenke, Phytologia 36: 470, 487, 493—497, & 506 (1977) and 37: 22—25 & 508. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 372. 1977; Richardson, Fla. Scient. 40: 303. 1977; Moldenke, Biol. Abstr. 64: 78. 1978; Moldenke, Phytologia 41: 411 & 419. 1979.

LACHNOCAULON ANCEPS (Walt.) Morong

Additional bibliography: Kral, Rhodora 78: 444. 1976; Batson, Gen. East. Pl. 40. 1977; Lelong, Sida 7: 127. 1977; Moldenke, Phytologia 36: 470 & 493—496 (1977) and 37: 23 & 24. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 372. 1977; Richardson, Fla.

Scient. 40: 303. 1977; Moldenke, Biol. Abstr. 65: 78. 1978; Moldenke, Phytologia 41: 419. 1979.

Additional illustrations: Batson, Gen. East. Pl. 40. 1977.

Lelong (1977), calling this plant "bog-buttons", records it as

"Infrequent in moist, open sandy areas" in Mobile County, Alabama. Other recent collectors have found it in sandy peat of flatwoods bogs, on wet prairies, in moist sandy peat of clearings in slash pine - saw palmetto woods, in wet ditches, and on mowed roadbanks, flowering in June and September. Lakela remarks that it is "common throughout" Hillsborough County, Florida, on moist creekbanks. The flower-heads are described as "chalky-gray-white" by D'Arcy. Shacklette found the species "in very wet heavily organic-stained soil in low pine-palmetto woods".

Material of L. anceps has been misidentified and distributed in some herbaria as L. beyrichianum Sporleder and L. minus (Chapm.) Small. On the other hand, the A. S. Hitchcock s.n. [Eustis, June-July 1894], Taylor & Taylor 13348, Williamson 2, and A. Wood s.n. [Tallahassee], distributed as L. anceps, actually are L. beyrichianum Sporleder (not L. minus as previously cited by me). Clare 3001 at Austin bears a label reading "Dichromena nivea Boeckl.", perhaps as a result of mixed labels during the mounting process.

Additional & emended citations: VIRGINIA: Greenville Co.: Smith & Hodgdon Pl. Exsicc. Gray. 1029 (Ld). NORTH CAROLINA: Bladen Co.: Fox & Godfrey 2644 (N). Brunswick Co.: Godfrey 48391 (Ld). Cumberland Co.: Fox & Godfrey 2592 (N). Onslow Co.: W. V. Brown s.n. [June 19, 1940] (Au--217135), s.n. [June 20, 1940] (Au--211611). Pamlico Co.: Godfrey 48295 (Ld). SOUTH CAROLINA: Bamberg Co.: Ahles & Haesloop 30595 (Ld). Darlington Co.: Radford & Stewart 401 (Au--26791). Horry Co.: Bell 7767 (Au--192198). GEORGIA: Clinch Co.: R. Kral 24289 (Au--245580). Jeff Davis Co.: Shacklette 7112 (Mi). Miller Co.: Thorne 4217 (Au--26788). Screven Co.: R. Kral 24052 (Au--245590). FLORIDA: Alachua Co.: D'Arcy 1602 (Ld). Hillsborough Co.: Lakela 25774 (Ld). Levy Co.: Kral & Kral 6918 (Au--232211). Nassau Co.: R. Kral 22729 (Ld). Okeechobee Co.: R. Kral 20478 (Au--245622). Osceola Co.: R. Kral 20468 (Au--245617). Santa Rosa Co.: Godfrey 56687 (Ld). Volusia Co. R. Kral 20443 (Au--245618), 20452 (Au--245573). ALABAMA: Mobile Co.: Taylor & Taylor 13577 (Ld). MISSISSIPPI: Pearl River Co.: Jones & Reynolds 11960 (Au--260902); R. Kral 17332 (Au--245538). LOUISIANA: Beauregard Par.: R. Kral 20156 (Au--245614, Ld), 20197 (Au--245537); Kral & Ricks 16991 (Au--245574). Rapides Par.: R. Kral 20069 (Au--245613). Vernon Par.: R. Kral 20039 (Au--245612); R. McVaugh 8457 (Au--26790). TEXAS: Bexar Co.: Clare 3001 (Au--26779). Hardin Co.: D. S. Correll 32972 (Ld); Correll & Correll 38791 (Ld); Lundell & Lundell 11152 (Ld). Jasper Co.: Gould 5838 (Au--26781); Thompson & Turner 170 (Au--135425). Tyler Co.: D. S. Correll 35836 (Ld), 36995 (Au--284472, Ld), 37246 (Au--284423, Ld), 37248 (Ld); Tharp, Turner, & Johnston 54955 (Au--26780).

LACHNOCAULON ANCEPS f. GLABRESCENS Moldenke

Additional bibliography: Kral, *Rhodora* 78: 444. 1976; Moldenke, *Phytologia* 36: 494--496 (1977) and 37: 24. 1977.

The Austin sheet of Kral 20420 has all the peduncles completely glabrous and is regarded by me as representing typical L. glabrum Körn. rather than the present form.

LACHNOCAULON BEYRICHIANUM Sporleder

Additional bibliography: Moldenke, *Phytologia* 36: 490 & 496--497 (1977), 37: 23 & 24 (1977), and 41: 411. 1979.

Recent collectors have found this species growing in the "sandy edges of pocosins", in limesink ponds, "in dry sterile white sand beneath Pinus palustris and Quercus virginiana", "in clumps to 20 cm. in diameter in sandy openings in extensive Pinus clausa scrub with many young pines and rather dense shrub cover of Lyonia ferruginea, L. dulcis, glaucous Serenoa repens, Quercus geminata, Q. chapmanii, Befaria racemosa, Persea humilis, Ceratiola, Osmanthus megacarpa, with Rhynchospora megalocarpa, Galactia elliotii and Smilax auriculata", "in wet sandy-peaty soil of roadside savannas", "in pure white sand among scattered Quercus laevis and pines", on lake shores, in dry woods, above highwater-mark on shores of ponds, on mucky wet shores of pools in cypress-gum clearings, in wet places in general, "frequent in low sandy areas bordering grassy depressions on dunes of white sand with low scrub of Quercus, Persea, Bumelia, Befaria, etc.", on sandy lakeshores, and at the "edge of a series of ponds in depressions in sand", at 105 feet altitude, flowering and fruiting from April to October.

Schallert s.n. [4/30/41] in the Britton Herbarium exhibits rather broader leaves than usual, more like those seen on L. minus (Chapm.) Small.

Most of the specimens listed below were previously erroneously cited by me as L. minus before the distinctions between that species and L. beyrichianum were more clearly understood. Material of L. beyrichianum has been misidentified and distributed in many herbaria as Eriocaulon sp., Lachnocaulon anceps (Walt.) Morong, L. michauxii Kunth, and L. minus (Chapm.) Small. On the other hand, the Fox & Godfrey 2592 & 2644, previously regarded as L. beyrichianum actually are L. anceps, Nash 148 is a mixture with L. minus, and Halfert s.n. [13 Apr. 1934] is a mixture with Syngonanthus flavidulus (Michx.) Ruhl.

Additional & emended citations: NORTH CAROLINA: Bladen Co.: R. Kral 27199 (N). Carteret Co.: W. V. Brown s.n. [June 18, 1941] (Au--217145). New Hanover Co.: Blake 12431 (Ld); Godfrey Pl. Exsicc. Gray. 926 (Au, Ba, Bl--76085, Ca--741292, Gg--275556, Hi--22050, Hi--53894, Ld, Ms--80430, N, N, Ok, S, St, W--1823367, Ws); Williamson 2 (N). GEORGIA: Baker Co.: Thorne 4363 (N). Lowndes Co.:

R. M. Harper 1607 (N). Screven Co.: Hardin & Duncan 14748 (Mi).
 FLORIDA: Broward Co.: Small & Carter 1037 (N). Gadsden Co.: A. Wood s.n. [Quincy] (Pa). Gilchrist Co.: West & Arnold s.n. [5 Oct. 1940] (N). Highlands Co.: Webster 4179 (N). Lake Co.: A. S. Hitchcock s.n. [Eustis, June-July 1894] (Fl--5434, Ka, N); Nash 148 in part (C, Ca--115162, D--703935, Es, Mi, Mm--7950, Ms--15407, W--223264, W--936870 in part), 1855 (Ba, C, Es, Ms--15499, W--252419). Leon Co.: A. Wood s.n. [Tallahassee] (Pa). Martin Co.: R. Kral 20418 (Au--245606, Ld). Nassau Co.: G. S. Schallert s.n. [5/4/41] (N). Polk Co.: P. O. Schallert s.n. [4/30/41] (Ca--841817, Dp--30192, N); Taylor & Taylor 5215 (Ld). Putnam Co.: Barnhart 2117 [Herb. Barnhart 2563] (N). Saint Lucie Co.: R. Kral 20378 (Au--245607). Seminole Co.: Ray, Wood, Smith, & Eaton 10714 (Ld). Volusia Co.: Halfert s.n. [3 Apr. 1934] in part (Mi); R. Kral 20441 (Au--245619, Ld). Wakulla Co.: Godfrey 55667 (N), 64164 (Ld). ALABAMA: Dauphin Island: Taylor & Taylor 13348 (Z).

LACHNOCAULON DIGYNUM Körn.

Additional bibliography: Moldenke, *Phytologia* 36: 497. 1977.

Kral encountered this species in "sandy peat of boggy bottoms" and in "sandy peat on roadbanks through pineland bogs".

Additional citations: FLORIDA: Bay Co.: R. Kral 15656 (Ld), 15667 (Au--245603). Escambia Co.: R. Kral 17634 (Au--245599), 23169 (Au--245600, Ld). ALABAMA: Mobile Co.: R. Kral 35642 (N). Washington Co.: R. Kral 35556 (N).

LACHNOCAULON ECILIATUM Small

This taxon is now regarded as cospecific with L. minus (Chapm.) Small, which see.

LACHNOCAULON ENGLERI Ruhl.

Additional bibliography: Hocking, *Excerpt. Bot. A.25*: 378. 1975; Moldenke, *Biol. Abstr.* 63: 6590. 1977; Moldenke, *Phytologia* 36: 494 & 497 (1977) and 37: 22--23. 1977.

Additional citations: FLORIDA: Martin Co.: R. Kral 18235 (Au--245535, Ld), 20386 (Au--245575, Ld). Volusia Co.: R. Kral 18426 (Au--245524, Ld). Walton Co.: R. Kral 17746 (Au--245601, Ld).

LACHNOCAULON ENGLERI f. ABLUDENS Moldenke

Additional bibliography: Moldenke, *Biol. Abstr.* 63: 6590. 1977; Moldenke, *Phytologia* 37: 23. 1977.

LACHNOCAULON ENGLERI var. CAULESCENS Moldenke

Additional bibliography: Moldenke, *Phytologia* 29: 286. 1974; Hocking, *Excerpt. Bot. A.25*: 378. 1975.

LACHNOCAULON FLORIDANUM Small

This taxon is now regarded as conspecific with L. glabrum Körn., which see.

LACHNOCAULON GLABRUM Körn.

Synonymy: Lachnocaulon floridanum Small, Fl. Southeast. U. S., ed. 1, 235 & 1328. 1903.

Additional & emended bibliography: Moldenke, N. Am. Fl. 19 (1): 46—50. 1937; Moldenke, Phytologia 1: 330, 331, 349, 357, 359, & 362. 1939; Moldenke, Alph. List Cit. 3: 753, 760, 777, 822, 841, 877, 899, 941, 942, 944, & 958. 1949; R. Kral, Sida 2: 315, 316, 319, 321—323, 325, 331, & 443, 1966; Long & Lakela, Fl. Trop. Fla., ed. 1, 262 & 938. 1971; Moldenke, Phytologia 29: 103, 204, 286, & 287 (1974), 36: 487 & 494 (1977), and 37: 23 & 24. 1977.

Kral 20420 at Austin has all the peduncles completely glabrous, not mixed with incompletely glabrescent ones as in other sheets of this collection.

Additional citations: FLORIDA: Charlotte Co.: R. Kral 18040 Au—245551). Lake Co.: Nash 1981 (C, Es, Ms—15501, N, W—252418). Lee Co.: R. Kral 18012 (Au—245531). Martin Co.: R. Kral 18288 (Au—245536), 20420 in part (Au—245624). Saint Lucie Co.: R. Kral 20424 (Au—245621, Ld).

LACHNOCAULON MINUS (Chapm.) Small

Additional synonymy: Lachnocaulon eciliatum Small, Fl. Southeast. U. S., ed. 1, 235 & 1328. 1903.

Additional & emended bibliography: J. K. Small, Man. Southeast. Fl. 256—257. 1933; Moldenke, N. Am. Fl. 19 (1): 46—50. 1937; Moldenke, Phytologia 1: 330, 331, 349, 352—354, 356, 357, 362, & 363. 1939; Moldenke, Alph. List Cit. 1: 37, 42, 90, 138, 139, 240, 257, 283, 284, 287, & 290. 1946; Moldenke, Phytologia 3: 494—496. 1951; Moldenke, Résumé 10—13 & 484. 1959; R. Kral, Sida 2: 315 & 321. 1966; Moldenke, Phytologia 18: 381 & 437 (1969) and 20: 35, 36, 41, 46, 48—50, 52, 81—83, & 252. 1970; Long & Lakela, Fl. Trop. Fla., ed. 1, 260, 262, & 938. 1971; Moldenke, Phytologia 25: 128, 129 & 225 (1973), 26: 43, 184, & 467 (1973), 36: 29, 494, 496, & 497 (1977), and 37: 22—25. 1977; Poppeton, Shuey, & Sweet, Fla. Scient. 40: 372. 1977; Moldenke, Biol. Abstr. 65: 78. 1978.

A note on Kral 17747 asserts that "This is the plant Small called L. eciliatum and it may be that hybrids between L. minus and L. engleri do fit Small's description"; it exhibits thin leaves very much like those seen in typical L. beyrichianum Sporleder. Similar leaves are seen on Godfrey 70114.

The Fox & Godfrey 2592 & 2644, previously regarded and cited as L. minus, seem actually to be L. anceps (Michx.) Ruhl., as is also Shacklette 7112, distributed as L. minus, while Barnhart 2117, Blake

12431, Godfrey 55667, 64164, & Pl. Exsicc. Gray. 926, Hardin & Duncan 14748, R. M. Harper 1607, Herb. A. Wood s.n., A. S. Hitchcock s.n. [Eustis, June-July 1894], Nash 1855, Ray, Wood, Smith, & Eaton 10714, Schallert s.n. [4/30/41] & s.n. [5/4/41], Small & Carter 1037, Thorne 4363, Webster 4179, West & Arnold s.n. [5 Oct. 1940], and Williamson s.n. are L. beyrichianum Sporleder; Nash 148, in at least some herbaria, is a mixture of L. minus and L. beyrichianum.

Additional citations: NORTH CAROLINA: Brunswick Co.: Bradley & Stevenson 3306 (Au—250964, Ld); Godfrey 49350 (Ld); Godfrey & Fox 49742 (Ld). Onslow Co.: R. Kral 22472 (Au—245583). SOUTH CAROLINA: Georgetown Co.: R. Kral 19018 (Au—245587, Ld). FLORIDA: Highlands Co.: Brass 14545 (W—2065050). Lake Co.: Biltmore Herb. 15001d (N, N); Bright 3842 (Ws); Nash 148 in part (W—936870 in part). Leon Co.: Godfrey 62896 (Au—229695), 70114 (Au—290101, Ld); N. C. Henderson 63-1066 (Au—229912); Kral & Godfrey s.n. [15 Aug. 1962] (Au—245616). Putnam Co.: R. M. Harper 7 (N, N, W—513490), 8 in part (W—513491). Seminole Co.: R. Kral 20457 (Au—245602, Ld). Volusia Co.: R. Kral 18427 (Au—245620, Ld). Walton Co.: Curtiss 3022 (Bc, C, Ca—189378, I, Mu—374, N, Pa, W—45319, W—436874); R. Kral 17747 (Au—245615). County undetermined: Eaton 1059 (Ld).

LEIOTHRIX Ruhl.

Additional bibliography: Hocking, Excerpt. Bot. A.25: 378 (1975) and A.28: 170 & 171. 1976; Moldenke, Biol. Abstr. 63: 3041 (1977) and 64: 4787. 1977; Moldenke, Phytologia 37: 25—31, 33, 270, 489, 494, & 508 (1977) and 38: 30, 31, & 507. 1978.

The M. A. Chase 10432, distributed in some herbaria as Leiothrix sp., actually is Paepalanthus cuspidatus Alv. Silv.

LEIOTHRIX ANGUSTIFOLIA (Körn.) Ruhl.

Additional bibliography: Moldenke, Phytologia 37: 25. 1977.

Additional citations: BRAZIL: Bahia: Davidse, Ramamoorthy, & Vital 11954 (N).

LEIOTHRIX ARGENTEA Alv. Silv.

Additional bibliography: Moldenke, Phytologia 25: 96 (1972) and 37: 494. 1977.

Hatschbach encountered this species in wet sandy soil among rocks, flowering and fruiting in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41345 (Z). MOUNTED CLIPPINGS: Silveira's original description (N, W, Z).

LEIOTHRIX ARGYRODERMA var. BREVIPIES Moldenke

Additional bibliography: Moldenke, Phytologia 37: 25. 1977.

The Eitens have found this plant growing in a small natural marsh at the side of a pond between rock outcrops in a thin humus layer over the sloping rock face, at 2450 meters altitude, flowering and fruiting in November.

Additional citations: BRAZIL: Minas Gerais: Glaziou 9000 [U. S. Nat. Herb. photo 5889] (W--2830402--fragment & photo of type). Rio de Janeiro: Eiten & Eiten 6606 (N), 6608 (N).

LEIOTHRIX CURVIFOLIA (Bong.) Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 25--26, 33, & 270. 1977.

The Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 28221, distributed as typical L. curvifolia, seems better placed as var. lanuginosa (Bong.) Ruhl.

LEIOTHRIX CURVIFOLIA var. **LANUGINOSA** (Bong.) Ruhl.

Additional bibliography: Moldenke, *Phytologia* 29: 288. 1974.

Recent collectors describe this plant as a tufted herb, the inflorescences to 7 cm. tall, the heads light-gray, and have found it growing on campos in areas of campo, cerrado on the outcrops, and wooded valleys", at 1200 meters altitude, flowering and fruiting in March.

The Irwin & al. 28221, cited below, was distributed as and previously cited by me in error as typical L. curvifolia (Bong.) Ruhl.

Additional & emended citations: BRAZIL: Minas Gerais: Irwin, Fonsêca, Souza, Reis dos Santos, & Ramos 28221 (N, W--2759063, Z).

LEIOTHRIX CURVIFOLIA var. **SETACEA** Ruhl.

Additional bibliography: Moldenke, *Phytologia* 29: 288. 1974.

Recent collectors have found this plant on wet sandy campos, in fruit in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40837 (Ld); Mexia 5799 (Au--26794).

LEIOTHRIX DIELSII Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 26. 1977.

Additional citations: BRAZIL: Rio de Janeiro: Segadas-Vianna, Lau, Ormond, Machline, & Laredo I.158 [Herb. Rio de Jan. 108893] (Au--210062).

LEIOTHRIX DUBIA Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 33: 22. 1976.

Hatschbach has encountered this plant in wet sandy soil at the base of some hills, flowering in April. He reports the flowers as "white".

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41288 (Ld). MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

LEIOTHRIX ECHINOCEPHALA Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 26. 1977.

Hatschbach encountered this species on "afloramentos rochosos, depressões, arenosos", flowering and fruiting in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40914 (Z).

LEIOTHRIX FLAVESCENS (Bong.) Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 26--27. 1977.

Recent collectors have found this plant growing in brejo (wet sedge meadow) and in wet soil at the edge of correjo, flowering in April, fruiting in April and July.

Additional citations: BRAZIL: Goiás: Hatschbach 40062 (Ld). Minas Gerais: Hatschbach 41333 (Ld).

LEIOTHRIX FLUMINENSIS var. **PUBERULA** Moldenke

Additional bibliography: Moldenke, *Phytologia* 29: 290. 1974.

Additional citations: BRAZIL: State undetermined: Guillemin 239 [U. S. Nat. Herb. photo 5900] (W-2830403--fragment & photo of type).

LEIOTHRIX FULGIDA Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 28. 1977.

Additional citations: BRAZIL: Minas Gerais: Mexia 5882 (Au-26808).

LEIOTHRIX HATSCHBACHII Moldenke

Additional bibliography: Moldenke, *Phytologia* 29: 290. 1974; Hocking, *Excerpt. Bot. A.* 25: 378. 1975.

LEIOTHRIX HIRSUTA (Wikstr.) Ruhl.

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 37: 28. 1977.

Recent collectors describe this species as an herb, 25 cm. tall, the leaves pilose, and the inflorescences cream-color. They have found it growing in sandy soil in secondary forests disturbed to extract Attalea funifera fiber, as well as in wet places in general, flowering in March and July, in fruit in March.

Additional citations: BRAZIL: Bahia: Mori, Mattos Silva, Kallunki, Santos, & Santos 9664 (Ld), 9695 (Ld); Santos & Mattos Silva 3284 (Ld).

LEIOTHRIX HIRSUTA var. **BLANCHETIANA** (Körn.) Ruhl.

Additional bibliography: Moldenke, *Phytologia* 36: 16. 1976.

Recent collectors have encountered this plant on campos, flowering in September.

Additional citations: BRAZIL: Bahia: Mori, Mattos Silva, & Santos 10508 (Ld).

LEIOTHRIX HIRSUTA var. **TONSILIS** Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 33: 23. 1976.

LEIOTHRIX SINUOSA Giulietti in Monteiro-Scanavacca, Mazzoni, & Giulietti, Bol. Bot. Univ. S. Paulo 4: [61], 62, 68, & 69, fig. 6 & 7, 1976.

Bibliography: Monteiro-Scanavacca & Mazzoni, Bol. Bot. Univ. S. Paulo 4: [105]. 1976; Monteiro-Scanavacca, Mazzoni, & Giulietti, Bol. Bot. Univ. S. Paulo 4: [61], 62, 68, & 69, fig. 6 & 7, 1976.

Illustrations: Monteiro-Scanavacca, Mazzoni, & Giulietti, Bol. Bot. Univ. S. Paulo 4: 69, fig. 6 & 7, 1976.

This species is based on A. M. Giulietti 4913 from "longo da rodovia Vespasiano-Conceição do Mato Dentro, km. 114—139", município Jaboticaguba, Serra do Cipó, Minas Gerais, Brazil, collected on January 26, 1974, and probably deposited in the herbarium of the University of São Paulo.

LEIOTHRIX SPERGULA Ruhl.

Additional bibliography: Moldenke, Phytologia 33: 24 (1976) and 37: 489, 1977.

Additional citations: BRAZIL: Minas Gerais: Mexia 5781 (Aug. 26, 1975).

LEIOTHRIX UMBRATILIS Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 171, 1976; Moldenke, Phytologia 37: 29, 1977.

LEIOTHRIX UMBRATILIS var. **BREVIPES** Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 171, 1976; Moldenke, Phytologia 37: 29, 1977.

LEIOTHRIX VIVIPARA var. **ANGUSTA** Ruhl.

Additional bibliography: Moldenke, Phytologia 35: 16, 1976.

Additional citations: BRAZIL: Minas Gerais: P. Clausen s.n. [Serra do Caraça; U. S. Nat. Herb. photo 5898] (W.—photo).

MESANTHEMUM Körn.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 324 & 327—328, fig. 292, 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57 & 64—65, fig. 339, 1968; Hepper in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 540, 1977; Moldenke, Biol. Abstr. 63: 3041, 1977; Moldenke, Phytologia 37: 30 & 508 (1977) and 41: 421 & 424, 1979.

MESANTHEMUM ALBIDUM H. Lecomte

Synonymy: Eriocaulon guineense Moldenke, Résumé Suppl. 4: 6, nom. nud. 1962; Phytologia 8: 386, 1962 [not E. guineense Steud., 1855]. Eriocaulon hirsutulum Moldenke, Résumé Suppl. 4: 6, nom. nud. 1962; Phytologia 8: 387, 1962. Eriocaulon toumouense Moldenke, Résumé Suppl. 17: 4 & 18, hyponym. 1968; Phytologia 19: 468, 1970.

Additional bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 327 & 328, 1931; Moldenke, Phytologia 8: 386—387, 1962;

Moldenke, Résumé Suppl. 4: 6. 1962; Anon., Assoc. Étud. Tax. Fl. Afr. Trop. Index 1962: 29. 1963; Hocking, Excerpt. Bot. A.6: 455. 1963; Moldenke, Biol. Abstr. 42: 1517. 1963; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 65. 1968; Moldenke, Résumé Suppl. 17: 4 & 10. 1968; Moldenke, Phytologia 18: 181 (1969), 19: 468--469 (1970), and 20: 281 & 410. 1970; Anon., Biol. Abstr. 51 (17): B.A.S.I.C. S.72. 1970; Moldenke, Biol. Abstr. 51: 9629. 1970; G. Taylor, Ind. Kew. Suppl. 14: 54. 1970; Anon., Assoc. Étud. Tax. Fl. Afr. Trop. Index 1970: 25. 1971; Moldenke, Biol. Abstr. 18: 445. 1971; Moldenke, Fifth Summ. 1: 217 (1971) and 2: 502 & 943. 1971; Hepper in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 540. 1972; Moldenke, Phytologia 24: 464 (1972), 25: 84 (1972), 33: 25 & 26 (1976), and 41: 421 & 424. 1979.

Hutchinson & Dalziel (1931) comment that this species is "Much resembling Eriocaulon; small herb with very short leaves and slender peduncles with basal sheath about 2 cm. long; heads white, depressed globose, 1/4 in. diam.", citing only Pobéguin 1359 from French Guinea. Meikle (1968) characterizes it as a "Slender annual, plants scattered in open colonies; leaves subglabrous, generally less than 1 1/4 in. long; peduncles slender, shining, to about 6 in. high, clothed with spreading hairs; involucre bracts broad, pallid; floral bracts wanting; florets whitish, pilose, receptacle pilose with pallid hairs". He cites the following collections at Kew: SÉNÉGAL: Adam 18370. GUINEA: Adames 363; Chillou 3904; Pobéguin 1153, 1359. SIERRA LEONE: Jordan 588. It has been found in anthesis from August to October.

MESANTHEMUM AURATUM H. Lecomte

Synonymy: Mesanthemum rubrum Moldenke, Résumé Suppl. 4: 6, nom. nud. 1962; Phytologia 8: 390--391. 1962.

Additional bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 327 & 328. 1931; Moldenke, Résumé Suppl. 4: 6. 1962; Moldenke, Phytologia 8: 390--391. 1962; Anon., Assoc. Étud. Tax. Fl. Afr. Trop. Index 1962: 29. 1963; Hocking, Excerpt. Bot. A.6: 455. 1963; Moldenke, Biol. Abstr. 42: 1517. 1963; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 65. 1968; Moldenke, Phytologia 20: 285. 1970; G. Taylor, Ind. Kew. Suppl. 14: 86. 1970; Moldenke, Fifth Summ. 1: 217 (1971) and 2: 946. 1971; Moldenke, Phytologia 25: 142 (1973) and 33: 25. 1976.

Hutchinson & Dalziel (1931) describe this species as "A small herb with a few radical leaves and very slender pilose peduncles.. apparently a very distinct species", citing only Pobéguin 30 from French Guinea. Meikle (1968) characterizes it as a "Slender annual, plants often in rather close tufts; leaves thinly pilose or subglabrous, usually less than 3--5 cm. long; peduncles to about 10 in. high, slender, shining, thinly clothed with spreading hairs; involucre bracts narrow, fuscous, pilose; floral bracts filiform, plumose, orange or reddish; florets yellow or red, concealed by the floral bracts and pale receptacular hairs." He cites the fol-

lowing collections from Kew: GUINEA BISSAU: Raimundo & Guerra 931
 GUINEA: Chillou 675, 676, 679; Jacques-Félix 7451; Schnell 7479.
 SIERRA LEONE: Jaeger 576. It has been found in anthesis from Oc-
 tober to January.

MESANTHEMUM BENNAE Jacques-Félix

Additional bibliography: Meikle in Hutchins. & Dalz., Fl. W.
 Trop. Afr., ed. 2, 3: 64. 1968; Moldenke, Phytologia 37: 30. 1977.

Meikle (1968) characterizes this species as a "Tufted perenni-
 al; leaves pilose or pubescent; peduncles thinly pilose with
 spreading hairs, 16--18 in. high; capitula 2--2.5 cm. diam.; in-
 volucral bracts whitish or pale brown; florets pallid, immersed
 in a cushion of long whitish receptacular hairs". He cites only
Jacques-Félix 2091 from Guinea. It has been found in flower in
 October.

MESANTHEMUM JAEGERI Jacques-Félix

Additional bibliography: Meikle in Hutchins. & Dalz., Fl. W.
 Trop. Afr., ed. 2, 3: 64. 1968; Moldenke, Phytologia 35: 17. 1976.

Meikle (1968) calls this species a "Robust perennial with a
 swollen bulbous base; leaves and peduncles pilose with spreading
 hairs; scapes to 16 in. high, capitula 1--1.8 cm. diam.; involu-
 cral bracts dirty whitish; florets whitish, immersed in a cushion
 of long black receptacular hairs". He cites the following col-
 lections at Kew: SIERRA LEONE: Cole 155; Jaeger 1625, 7655. NI-
 GERIA: Southern: Savory & Keay FHI.25079. It has been found in
 flower in September and December.

MESANTHEMUM PRESCOTTIANUM (Bong.) Körn.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W.
 Trop. Afr., ed. 1, 2: 327--328. 1931; Meikle in Hutchins. & Dalz.,
 Fl. W. Trop. Afr., ed. 2, 3: 64. 1968; Hepper in Hutchins. & Dalz.,
 Fl. W. Trop. Afr., ed. 2, 3: 540. 1972; Moldenke, Phytologia 37:
 30. 1977.

Hutchinson & Dalziel (1931) report "White, star-shaped flower-
 heads" for this species, citing only Caille s.n. [Herb. Chevalier
 15038 & 34448], Deighton 1277, Herb. Lindley s.n., and Pobéguin
2092 from French Guinea and Sierra Leone. Meikle (1968) calls it
 a "Slender perennial; leaves and peduncles thinly clothed with
 spreading hairs; scapes up to 18 in. high; leaves narrow, grass-
 like; capitulum with conspicuous radiating involucral bracts, like
 a white daisy". He cites the following collections from Kew:
 GUINEA: Adames 273; Baldwin 9772; Miquel 64; Pobéguin 734; Schnell
6218, 6789. SIERRA LEONE: Deighton 1277, 5154; Haswell 80; Herb.
Lindley s.n.; Jaeger 7595; T. S. Jones 231; Melville & Hooker 358.
 LIBERIA: Baldwin 9516. IVORY COAST: Bouhey GC.18053; Gruys 56;
Schnell 6363. It has been found in anthesis in June and from Au-
 gust to November.

MESANTHEMUM RADICANS (Benth.) Körn.

Additional & emended bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 327 & 328, fig. 292. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 64--65, fig. 339. 1968; Moldenke, Phytologia 37: 30 (1977) and 41: 424. 1979.

Emended illustrations: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 327, fig. 292. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 65, fig. 339. 1968.

Meikle (1968) characterizes this species as a "Robust perennial, often forming loose mats in swamps or streams; stems often elongate, leaves and peduncles thinly pilose or glabrescent; scapes up to 2 ft. high; capitula 1--1.3 cm. diam.; involucre bracts whitish; florets pallid, immersed in a cushion of long, whitish or pale gray receptacular hairs". He cites the following collections at Kew: SÉNÉGAL: Berhaut 5822; Perrottet s.n. SIERRA LEONE: Harley 1958; Harvey 143; Jaeger 2074. LIBERIA: Adam 20332; Adames 461; DeWit 9122; Voorhoeve 1217. IVORY COAST: DeWilde 219; DeWit 7902; Schnell 6542. GHANA: Fishlock 34/1931. DAHOMEY: Adjanohoun 248; Raynal 13543. NIGERIA: Southern: Barter 2201; Kennedy 2798; Onochie FHI. 32099; Onyeagocha FHI.7790; Richards 5086. FERNANDO PO: Milne s.n. He lists it also from "Congo and Angola and eastwards to Uganda and Tanzania". It has been found in anthesis from November to February and in fruit in April, May, August, and September.

Balslev encountered this species in a "Flat area of sandy lake deposits. Vegetation of grass fields with spots of dense forest with trees not more than 6 m. high. The area swampy." The altitude was 1140 m. and he found it in flower in September.

Additional citations: TANZANIA: Tanganyika: Balslev 016 (Ac).

MOLDENKEANTHUS P. Morat

Additional bibliography: Moldenke, Biol. Abstr. 63: 3041. 1977; Moldenke, Phytologia 37: 30 & 508. 1977; H. N. & A. L. Moldenke, Cord. Greet. 1 & 4. 1977.

MOLDENKEANTHUS ITREMENSIS P. Morat

Additional bibliography: Moldenke, Phytologia 35: 17--18. 1976; H. N. & A. L. Moldenke, Cord. Greet. 1 & 4. 1977.

Additional illustrations: H. N. & A. L. Moldenke, Cord. Greet. 1. 1977.

Additional citations: MOUNTED ILLUSTRATIONS: P. Morat, Addisonia, ser. 2, 15: 465, pl. 1. 1976 (Z, Z).

PAEPALANTHUS Mart.

Additional synonymy: Paepacantus Kunth, in herb.

Additional bibliography: Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 1, 2: 324 & 328. 1931; Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57 & 65. 1968; Hocking, Excerpt. Bot. A.25: 378--380 (1975) and A.26: 6, 29, 89, & 90. 1975; Spellman, Dwyer, & Da-

vidse, *Rhodora* 77: 124. 1975; Hocking, *Excerpt. Bot. A.* 28: 170 & 259. 1976; Moldenke, *Biol. Abstr.* 61: 4884. 1976; Moldenke in *Steyerm. & Brewer-Carías, Bol. Soc. Venez. Cienc. Nat.* 132/133: 281—286, fig. 3 & 4. 1976; *Steyerm. & Brewer-Carías, Bol. Soc. Venez. Cienc. Nat.* 132/133: 181, 199, 200, & 227. 1976; Moldenke, *Biol. Abstr.* 63: 2452 & 3041. 1977; "M.P.B.", *Biol. Abstr.* 63: 6594. 1977; Moldenke, *Biol. Abstr.* 63: 6590 (1977) and 64: 686, 1838, & 4787. 1977; Moldenke, *Phytologia* 37: 26—28, 31—58, 69—71, 74—81, 84, 88, 89, 94—96, 258, 259, 263, 264, 269, 271—273, 420, 422, 485, 488, 489, 492, 496, 599. 506, & 509 (1977), 38: 23—25, 28, 29, 32, 33, 35—39, 41, 43, 45—48, 50, 118, 121, 123, 124, 126, 127, 129, 133, & 134 (1977), 38: 180, 183, 185, 186, 188, 190—192, 203, 506, 509, & 510 (1978), and 40: 261 & 509. 1978; Anon., *Roy. Bot. Gard. Kew. Lib. Curr. Aware. List* 7: 29 (1978) and 8: 33. 1978; Satake, *Journ. Jap. Bot.* 53: 107—111, fig. 1 & 2. 1978; Moldenke, *Phytologia* 41: 422. 1979.

The *Irwin* 775, distributed as *Paepalanthus* sp., actually is *Syngonanthus gracilis* var. *koernickeanus* Ruhl., while *Irwin* 774 is *S. xeranthemoides* var. *grahamae* Moldenke.

PAEPALANTHUS ACANTHOPHYLLUS Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 31. 1977.

Additional citations: BRAZIL: Distrito Federal: *Héringer* 12125 [Herb. Brad. 64001 & 64008] (Ja, Ja). Minas Gerais: *Anderson, Stieber, & Kirkbride* 35857 (Ld).

PAEPALANTHUS ALBO-TOMENTOSUS Herzog

Additional bibliography: Moldenke, *Phytologia* 37: 32. 1977.

Recent collectors have encountered this species in restinga, flowering and fruiting in September.

Additional citations: BRAZIL: Bahia: *Davidse, Ramamoorthy, & Vital* 11860 (N); *Mori, Mattos Silva, & Santos* 10484 (Ld).

PAEPALANTHUS ALBO-VAGINATUS Alv. Silv.

Synonymy: *Paepalanthus albo-vaginatus* Alv. Silv., *Fl. Mont.* 1: pl. 155, sphalm. 1928.

Additional bibliography: Moldenke, *Phytologia* 37: 32. 1977.

Additional citations: BRAZIL: Paraná: *Dusén* 15586 (Ld); *Shepherd & Andrade* 6120 (N). MOUNTED CLIPPINGS: *Silveira's* original description & illustration (N, W, Z).

PAEPALANTHUS ALLEMANII C. Diogo

Additional bibliography: Moldenke, *Phytologia* 25: 146. 1973.

Additional citations: BRAZIL: Ceará: *Allemão* 1551 [Herb. Mus. Nac. Rio Jan. 29469; U. S. Nat. Herb. photo 5890] (W—fragment & photo of isotype).

PAEPALANTHUS ALPINUS Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 32. 1977.

Additional citations: COLOMBIA: Boyacá: Langenheilm 3631 (Ld).

PAEPALANTHUS ARENICOLA Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 26: 468. 1973.

The Irwin, Reis dos Santos, Souza, & Fonsêca 24936, distributed as and previously cited as P. arenicola, is now the type collection of P. urbanianus var. angustifolius Moldenke.

Additional citations: MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS ARETIOIDES Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 33. 1977.

Hatschbach encountered this species in wet sandy campo, flowering in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40838 (Z).

PAEPALANTHUS BARBIGER Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 37: 33. 1977.

Additional citations: BRAZIL: Minas Gerais: Anderson, Stieber, & Kirkbride 35299 (Ld).

PAEPALANTHUS BELIZENSIS Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.* 25: 378. 1975; Moldenke, *Phytologia* 35: 20. 1976.

Dwyer found this plant growing on savannas, flowering and fruiting in May.

Additional citations: BELIZE: Dwyer 10719 (N).

PAEPALANTHUS BIFIDUS (Schrad.) Kunth

Additional synonymy: Paepacantus bifudos (Schrad.) Kunth, in herb.

Additional bibliography: Hocking, *Excerpt. Bot. A.* 28: 170. 1976; Moldenke, *Phytologia* 37: 33-34, 43, & 47. 1977.

Recent collectors have found this plant growing in restinga, in sandy soil along old roads, and under Pinus caribaea in pine plantations, at 50--125 meters altitude, flowering and fruiting in July and August, and describe it as an herb, 10--15 cm. tall, the "flowers cream"-color. Irwin refers to it as "locally abundant in white quartz sand of forest clearings, a rounded herb in dense stands, early colonizer in recently cleared areas; flowers gray-white. The flowers are described as "cream-color" also on Pinheiro 2247.

The Rosa & Santos 1973, distributed as Paepalanthus bifidus, actually is Philodice hoffmannseggii Mart.

Additional citations: GUYANA: Irwin 5 (Au--173724); Mori, Bolten,

Persaud, Boyan, Roberts, Jugernauth, & Dwarka 8057 (Ld, N); Mori, Persaud, & Boyan 8008 (Ld, N). BRAZIL: Bahia: Mori, Mattos Silva, Kallunki, Santos, & Santos 9756 (Ld); Pinheiro 2247 (Ld, N); Santos & Mattos Silva 3270 (Ld).

PAEPALANTHUS BIFIDUS f. **BREVIPIES** Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 170. 1976; Moldenke, Phytologia 35: 20. 1976.

Recent collectors have found this plant in open places in restinga and in wet sandy soil at the base of hills, flowering and fruiting in April and September.

Additional citations: BRAZIL: Bahia: Mori, Mattos Silva, & Santos 10469 (Ld). Minas Gerais: Hatschbach 41294 (Ld); Mexia 5816 (Au--26796).

PAEPALANTHUS BONGARDI Kunth

Additional bibliography: Moldenke, Phytologia 37: 34. 1977.

Additional citations: BRAZIL: Minas Gerais: P. Clausen 38 [U. S. Nat. Herb. photo 5899] (W--fragment & photo).

PAEPALANTHUS BRACHYPUS f. **BREVIPILOSUS** Moldenke, Phytologia 40: 261. 1978.

Bibliography: Moldenke, Phytologia 40: 261. 1978.

Citations: BRAZIL: Minas Gerais: Hatschbach 40922 (Z--type).

PAEPALANTHUS BRASILIENSIS (Mart.) Mart.

Additional bibliography: Moldenke, Phytologia 37: 34. 1977.

Additional citations: BRAZIL: Bahia: Lanna Sobrinho 1437 [Herb. Brad. 60604] (Ja).

PAEPALANTHUS BROMELIOIDES Alv. Silv.

Additional bibliography: Moldenke, Phytologia 37: 34--35. 1977.

Irwin refers to this plant as a "rosette herb with inflorescences ca. 0.5 m. tall, the tightly fitting leaf-bases ('tanks') containing a clear mucilaginous fluid, the flowers grayish-white, locally common in grassy fields in gray sandy soil" and found it in flower and fruit in January.

The Tryon & Tryon 6823, distributed as P. bromelioides, actually is P. lanceolatus Körn.

Additional citations: BRAZIL: Minas Gerais: Irwin 2436a (Au--173079).

PAEPALANTHUS BRYOIDES (Riedel) Kunth

Additional bibliography: Moldenke, Phytologia 37: 35. 1977.

Additional citations: BRAZIL: Minas Gerais: Anderson, Stieber, & Kirkbride 35232 (Ld).

PAEPALANTHUS CAPANEMAE Alv. Silv.

Additional bibliography: Moldenke, Phytologia 37: 36. 1977.

Recent collectors report finding this plant among rocks at 1200 meters altitude.

Additional citations: BRAZIL: Minas Gerais: Windisch & Ghil-lány 129 [Herb. Brad. 61238] (N).

PAEPALANTHUS CAPARÔENSIS Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 36. 1977.

Additional citations: BRAZIL: Espirito Santo: Irwin 2758 (Mi).

PAEPALANTHUS CATHARINAE Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 37--38. 1977.

Recent collectors have encountered this plant in wet depressions on campo and in brejo (wet sedge meadows), flowering in October and November, fruiting in November.

Additional citations: BRAZIL: Paraná: Dusén 15783 (Ld); Hatschbach 40240 (Ld), 40448 (Ld). Rio Grande do Sul: Rambo 45408 (Au--26797).

PAEPALANTHUS CATHARINAE var. **HATSCHBACHI** (Moldenke) Moldenke & Smith

Additional bibliography: Moldenke, *Phytologia* 37: 38. 1977.

Additional citations: BRAZIL: Rio Grande do Sul: Rambo 45014 (Au--26798, Au--26799).

PAEPALANTHUS CLAUSSENIANUS Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 39 & 42. 1977.

Turner describes this taxon as "perennial brittle-stemmed plants to 5 feet tall in wet sandy places in wet areas on ridges" and notes that he took a photograph of the plants *in situ*.

Additional citations: BRAZIL: Distrito Federal: Héringer 12126 [Herb. Brad. 64002 & 64009] (Ja, Ja); Turner 9144 (Ld).

PAEPALANTHUS COLOIDES Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 39. 1977.

Hatschbach encountered this plant in sandy soil near correjo, flowering in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41366 (Z); Mexia 5733 (Au--26805).

PAEPALANTHUS COLUMBIENSIS Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 32 & 39. 1977.

Recent collectors have found this species on wet paramos with Hypochoeris, Espeletia, Gentiana, and orchids, at 3420 m. altitude, flowering and fruiting in December.

Material of this species has been misidentified and distributed in some herbaria as "Compositae".

Additional citations: COLOMBIA: Cundinamarca: Escobar & Uribe 538 (Ld). Valle del Cauca: Cuatrecasas 17841 (W--2816693).

PAEPALANTHUS COMANS Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 37: 39 & 53. 1977.

Recent collectors have encountered this plant on wet sandy campos, flowering in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40862 (Ld); Strang 1071 [Castellanos 26654; Herb. Brad. 60457] (Ja).

MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS CONVEXUS Gleason

Additional bibliography: Moldenke, *Biol. Abstr.* 64: 2433. 1977; Moldenke, *Phytologia* 37: 39. 1977.

The Steyermark, Carías, Dunsterville, & Dunsterville 112437, 112439, & 112615, distributed as possibly P. convexus, seem better regarded as P. fraternus N. E. Br.

PAEPALANTHUS CRASSICAULIS Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 40. 1977.

Langenheim found this plant growing "on bedrock in 'badlands area' of shrubby association in shallow soil of eroded Tertiary sandstone" and reports the corollas "white". Other recent collectors have found it in white sand in secondary forests and in "wet sub-jalca", flowering and fruiting in May, the heads described as "white" or "whitish".

Additional citations: COLOMBIA: Boyacá: Langenheim 3570 (Ld). PERU: Amazonas: Boeke 1819 (N), 1845 (N).

PAEPALANTHUS CUSPIDATUS Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 26: 245. 1973.

Recent collectors have encountered this plant in sand under boulders and on "afloramento rochosos comente no solo arenoso", at 1300--1500 m. altitude, flowering and fruiting in December and January.

Additional citations: BRAZIL: Minas Gerais: M. A. Chase 10432 (N, N—photo); Hatschbach 40919 (Z). MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS DENSIFOLIUS Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 37: 40. 1977.

Hatschbach describes this plant as "planta com até 1 m. de altura" and found it growing in "solo arenoso antes rochas", flowering and fruiting in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41299 (Z).

PAEPALANTHUS DENUDATUS Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 40. 1977.

Recent collectors describe this plant as a shrub, 80 cm. tall, with white flowers, and found it in "depressões com areia" on rocky cliffs, flowering in December.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40906 (Ld); Shepherd, Andrade, Kinoshita, & Tamashiro 3907 (N).

PAEPALANTHUS DISTICHOPHYLLUS Mart.

Additional bibliography: Moldenke, *Phytologia* 33: 38. 1976.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 27372 (Ld).

PAEPALANTHUS DIVARICATUS (Bong.) Kunth

Additional bibliography: Moldenke, *Phytologia* 35: 23. 1976.

Hatschbach describes this species as a branched perennial, 1 meter tall, with white flowers, and found it growing in sandy soil between rocks at the base of a hill, flowering in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41276 (Ld); Shepherd, Andrade, Kinoshita, & Tamashiro 3908 (N). MOUNTED CLIPPINGS: Kunth's original description (N, W, Z).

PAEPALANTHUS DUIDAE Gleason

Additional bibliography: Moldenke, *Phytologia* 37: 41. 1977.

Recent collectors describe this plant as "clumping, leaves stiff, brittle, satiny light-green, peduncles medium yellow-tan, phyllaries dark gray-black, the inner tipped white, heads white" and found it in essentially flat areas with small depressions and hills", at 2750 meters altitude, flowering in February.

Additional citations: VENEZUELA: Amazonas: Tillett, Colvés, & al. 752-349 (N).

PAEPALANTHUS ELONGATUS (Bong.) Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 41. 1977.

Additional citations: BRAZIL: Goiás: Hatschbach 36826 (N).

PAEPALANTHUS ELONGATUS var. **ANGUSTIFOLIUS** Alv. Silv.

Additional bibliography: Moldenke, *Phytologia* 37: 41. 1977.

Additional citations: BRAZIL: Goiás: Hatschbach 36772 (Ld).

MOUNTED CLIPPINGS: Silveira's original description (N, W, Z).

PAEPALANTHUS ENSIFOLIUS (H.B.K.) Kunth

Additional bibliography: Moldenke, *Phytologia* 37: 42. 1977.

Recent collectors have encountered this plant in mossy forests and paramos, on humid slopes, in humid herb vegetation between dry scrub vegetation, and dominant in dry scrub which is very wet in the spring, at 2200—3100 m. altitude, flowering in April, May, September, and December, describing it at 1—3 m. tall.

Material of P. ensifolius has been misidentified and distributed in some herbaria as Valeriana sp.

Additional citations: ECUADOR: Azuay: Holm-Nielsen, Jeppesen, Løjtnant, & Øllgaard 4800 (Ut--352577b), 5071 (Ut--352574b). Loja: Hitchcock 21543 (N); Holm-Nielsen, Jeppesen, Løjtnant, & Øllgaard 3664 (Ut--352576b); MacBryde 308 (N, W--2812863); Madison & Coleman 2437 (W--2779594).

PAEPALANTHUS ERIGERON Mart.

Additional bibliography: Moldenke, Phytologia 26: 482--483. 1973.

Santos describes this plant as growing to 40 cm. tall, with white flowers, and encountered it on "original campo", flowering in August.

Additional citations: BRAZIL: Bahia: Santos 2364 (Z).

PAEPALANTHUS FALCIFOLIUS Körn.

Additional bibliography: Moldenke, Phytologia 37: 42. 1977.

Pinheiro describes this species as growing to about 40 cm. tall, with white flowers, and found it in anthesis in April.

Additional citations: BRAZIL: Bahia: Pinheiro 2105 (Ld, N).

PAEPALANTHUS FASCICULATUS (Rottb.) Kunth

Additional bibliography: Moldenke, Phytologia 37: 34, 42--43, & 49 (1977) and 38: 121. 1977.

Recent collectors describe the fruiting-heads of this species as "whitish-brown" and have encountered the plant in dense mats along roadsides in dry exposed soil in secondary forests, fruiting in October.

Additional citations: COLOMBIA: Vaupés: E. W. Davis 88 (G). VENEZUELA: Amazonas: H. C. Clark 6457 (Ld), 6862 (N).

PAEPALANTHUS FASCICULATUS f. SPHAEROCEPHALUS Herzog

Additional bibliography: Moldenke, Phytologia 37: 34 & 43. 1977.

Mori and his associates describe this plant as having "stems prostrate, inflorescence erect" and found it growing in sandy soil along old roads, at 50--125 m. altitude, flowering and fruiting in August. Other recent collectors have encountered it in sandy and open sandy areas and describe it as a "small herb in secondary growth". They have found it in anthesis from May to July. The flowers are said to have been "white" on Zarucchi 1432 & 1759 and "off-white" on Zarucchi 1680.

Additional citations: COLOMBIA: Vaupés: Zarucchi 1432 (N), 1680 (N), 1759 (N). GUYANA: Mori, Bolten, Persaud, Boyan, Roberts, Jugernauth, & Dwarka 8055 (La, N). BRAZIL: Amazonas: Pabst 9429 (Ja).

PAEPALANTHUS FASCICULATUS f. TENELLUS Herzog

Additional bibliography: Moldenke, Phytologia 35: 25. 1976.

Mori and his associates have found this plant growing in sandy soil along roadsides, flowering in August.

Additional citations: VENEZUELA: Amazonas: H. C. Clark 6654

(Ld). GUYANA: Mori, Bolten, Persaud, Boyan, Roberts, Jugernauth, & Dwarka 8099 (N, Z).

PAEPALANTHUS FORMOSUS Moldenke

Additional bibliography: Moldenke, *Phytologia* 37: 43. 1977.

Tillett and his associates have encountered this species "in vegetation of Brocchinia, Stegolepis pungens, Heliophora, etc.", at 1350 meters altitude, describe it as "common as small rosette plants, adults 1.5 m. tall, leaves satiny medium-green, drying on flowering peduncles [stems] to lustrous medium yellow-green, bracts light, pedicels [peduncles] light satiny yellow-brown, phyllaries sublustrous dark-brown with lighter border, flowers cream, slightly greyed, in some plants the leaves in 2 or more tufts on basal part of the flowering stem", and found it in flower and fruit in February.

Additional citations: VENEZUELA: Amazonas: Tillett, Ferrigni V., & Zorrilla F. 751-59 (N, N).

PAEPALANTHUS FRATERNUS N. E. Br.

Additional bibliography: Moldenke, *Phytologia* 37: 43--44. 1977.

Steyermark and his associates have collected what appears to be this species on rocky exposures at 2750--2800 m. altitude, flowering and fruiting in August and September, and describe the plant as having its heads "dull-white" or "sordid-white" and growing in dense or scattered clumps. Irwin found it "locally common rosette herb, inflorescence gray-white, in wet acid muck among rocks" at 9200 feet altitude, flowering in April.

The species is uncomfortably close to P. convexus Gleason and material of it has been so distributed. More intense study of these two taxa is required.

Additional citations: VENEZUELA: Bolívar: Steyermark, Carías, Dunsterville, & Dunsterville 112437 (N, W--2813994), 112439 (N), 112613 (W--2813995), 112615 (N). GUYANA: Irwin 705 (Au--173717).

PAEPALANTHUS GENTLEI Moldenke

Additional bibliography: Spellman, Dwyer, & Davidse 77: 124. 1975; Moldenke, *Phytologia* 35: 26. 1976.

Additional citations: BELIZE: Bartlett 11874 (Ld).

PAEPALANTHUS GLAUCOPHYLLUS Alv. Silv.

Additional & emended synonymy: Paepalanthus glaucophyllus Alv. Silv., Fl. Mont. 1: pl. 8, sphalm. 1928. Paepalanthus glaucophyllus Alv. Silv. ex Moldenke, *Phytologia* 29: 481, in syn. 1974.

Additional bibliography: Moldenke, *Phytologia* 29: 481--482. 1974.

Additional citations: MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS GNEISSICOLA Alv. Silv.

Synonymy: Paepalanthus geneissicola Alv. Silv., in herb.

Additional bibliography: Moldenke, *Phytologia* 37: 44. 1977.

Irwin describes this plant as a "common rosette herb forming mounded clumps or tufts 5--10 cm. in diameter among mosses and low grasses in meadows, in black muck soil", at 9000 feet altitude, the heads "gray-white", flowering in March.

Additional citations: BRAZIL: Espirito Santo: Irwin 2758 (Au--173580). MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS GYROTRICHUS Ruhl.

Additional bibliography: Moldenke, *Phytologia* 33: 42. 1976.

Recent collectors have encountered this plant on "campo rupestre e cerrado", flowering in December.

Additional citations: BRAZIL: Minas Gerais: Hatschbach & Koczicki 35402 (N); Shepherd, Andrade, Kinoshita, & Tamashiro 3918 (N).

PAEPALANTHUS INCANUS (Bong.) Körn.

Additional bibliography: Moldenke, *Phytologia* 33: 43. 1976.

Recent collectors have found this species growing on sandy campos, flowering in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40830 (Ld); Mexia 5748 (Au--26800).

PAEPALANTHUS JAUENSIS Moldenke

Synonymy: *Paepalanthus jauaensis* Moldenke ex Steyerl. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 200. 1976.

Additional bibliography: Moldenke in Steyerl. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 286. 1976; Steyerl. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 200. 1976; Moldenke, *Phytologia* 37: 46. 1977.

PAEPALANTHUS KANAI Satake, *Journ. Jap. Bot.* 53: 107--111, fig. 1 & 2. 1978.

Bibliography: Anon., *Roy. Bot. Gard. Kew. Lib. Curr. Aware.* List 7: 29. 1978; Satake, *Journ. Jap. Bot.* 53: 107--111, fig. 1 & 2. 1978.

Illustrations: Satake, *Journ. Jap. Bot.* 53: 108--110, fig. 1 & 2. 1978.

This amazing find was made in Gurma Prefecture on Honshiu island, Japan, where the taxon is apparently native. In habitat aspect it greatly resembles some of the coriaceous-leaved species of the South American Andes and its presence in Japan is truly amazing.

PAEPALANTHUS KARSTENII Ruhl.

Additional bibliography: Hocking, *Excerpt. Bot. A.* 25: 380. 1975; Moldenke, *Phytologia* 37: 46. 1977.

The flowers on Kirkbride & Idrobo 363 are said to have been "white" and these collectors have made a photograph of the plant

in situ. Langenheim and her associates found the species growing in Sphagnum.

Additional citations: COLOMBIA: Cundinamarca: Kirkbride & Idrobo 363 (N); Langenheim, Idrobo, Jaramillo, & Mora 3688 (Ld).

PAEPALANTHUS KARSTENII var. **COREI** Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.25: 380. 1975; Moldenke, Phytologia 35: 27. 1976.

Recent collectors describe this plant as having "heads tan" and have found it growing on well-drained hillsides of Espeletia páramos, at 3450 meters altitude, flowering and fruiting in October, and comment that the plants are "difficult to separate" for collection.

Additional citations: COLOMBIA: Antioquia: Boeke & McElroy 269 (N).

PAEPALANTHUS KARSTENII var. **MINIMUS** Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 170. 1976; Moldenke, Phytologia 33: 45. 1976.

García-Barriga & Jaramilla Mejía describe this plant as a "planta muy pequeñita, que crece formando almohadillas, flores blancas" and have found it growing at 2440—2750 meters altitude.

The Pennell 2256, previously regarded as representing this taxon, seems on closer examination to be a form of P. muscosus Körn.

Additional citations: COLOMBIA: Norte de Santander: García-Barriga & Jaramillo Mejía 19809 (N).

PAEPALANTHUS KARSTENII var. **SUBSESSILIS** (Moldenke) Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.28: 171. 1976; Moldenke, Phytologia 37: 46. 1977.

Recent collectors have encountered this plant at 3700—3960 meters altitude.

Additional citations: COLOMBIA: Santander del Norte/Cesar: García-Barriga & Jaramillo Mejía 19759 (N).

PAEPALANTHUS LAMARCKII Kunth

Additional bibliography: Meikle in Hutchins. & Dalz., Fl. W. Trop. Afr., ed. 2, 3: 57 & 65. 1968; Spellman, Dwyer, & Davidse 77: 124. 1975; Moldenke, Phytologia 37: 46—47, 77, 80, & 81. 1977.

Meikle (1968) describes this species as "Plants usually 3—7 mm. [sic!] high; capitula subglobose, greyish, pilose, 2—3.5 mm. diam.; sepals of female flowers hardening and recurving at maturity and throwing out the ripe seeds". He cites the following collections at Kew: GUINEA: Boissmaré 52 [Herb. Chillou 3482]; Chevalier 20307; Chillou 776; Jacques-Félix 7210. SIERRA LEONE: Adames 90, s.n. [Herb. Deighton 4128]; Deighton 1440; Jordan 161. LIBERIA: Bequaert s.n. [Herb. Linder 1451]. He also lists it from Congo, Mafia Island and "S. America". The dimensions he gives for the plant are obviously the result of an error in transcription and should be "cm.", not "mm." The plant has been found in flower in

Africa from October to December.

In Venezuela Davidse & González describe the heads as "grayish-white" and encountered the plant "along a small low-forested stream through Trachypogon-Byrsonima savanna", flowering in May. The Steyermark collection, cited below, collected at 100 meters altitude, flowering and fruiting in September, was previously erroneously cited as P. subtilis Miq., a closely similar species.

Additional citations: BELIZE: Gentle 9631 (Au—238859). VENEZUELA: Amazonas: J. A. Steyermark 58447 (N, S). Apure: Davidse & González 13053 (Ld).

PAEPALANTHUS LANCEOLATUS Körn.

Additional bibliography: Moldenke, *Phytologia* 37: 47. 1977.

The Tryons encountered this species growing in grass- and sedgeland "with shrubby areas with sandstone and quartzite derived soil and rocks", at 1120 meters altitude, flowering and fruiting in November. Their collection has hitherto been regarded erroneously as P. bromelioides Alv. Silv. and was so distributed and cited.

Additional & emended citations: BRAZIL: Minas Gerais: Hatschbach & Koczicki 35346 (N); Tryon & Tryon 6823 (N, Z).

PAEPALANTHUS LODICULOIDES Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.28*: 171. 1976; Moldenke, *Phytologia* 37: 48. 1977.

PAEPALANTHUS LODICULOIDES var. FLOCCOSUS Moldenke

Additional bibliography: Hocking, *Excerpt. Bot. A.28*: 171. 1976; Moldenke, *Phytologia* 37: 48. 1977.

PAEPALANTHUS LONGICAULIS var. GLABER Moldenke

Additional bibliography: Moldenke, *Phytologia* 37: 48. 1977.

Santos describes this plant as attaining a height of 80 cm. and found it growing in rocky soil, at 1050 m. altitude, flowering in May, the "flores em botões roxos".

Additional citations: BRAZIL: Bahia: T. S. Santos 3111 (Ld, N).

PAEPALANTHUS MACROCAULON Alv. Silv.

Additional bibliography: Moldenke in Steyermark & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 286. 1976; Steyermark & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 200 & 227. 1976; Moldenke, *Phytologia* 33: 49. 1976.

Additional citations: MOUNTED CLIPPINGS: Silveira's original description & illustration (N, W, Z).

PAEPALANTHUS MACROCAULON var. VENAMENSIS Moldenke

Additional bibliography: Moldenke, *Phytologia* 33: 49. 1976; Moldenke in Steyermark & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 286. 1976; Steyermark & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 200 & 227. 1976.

PAEPALANTHUS MACROCEPHALUS var. **MINARUM** (Körn.) Ruhl.

Additional bibliography: Moldenke, *Phytologia* 30: 57--58. 1975.

Hatschbach encountered this plant in wet sandy soil on a plain between a river and mountains, flowering and fruiting in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41342 (Z).

PAEPALANTHUS MACRORRHIZUS (Bong.) Kunth

Additional bibliography: Moldenke, *Phytologia* 37: 48. 1977.

Hatschbach found this plant growing on rocky campo cerrado, flowering and fruiting in January.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 40811 (Z).

PAEPALANTHUS MANICATUS V. A. Pouls.

Additional bibliography: Moldenke, *Phytologia* 35: 28 (1976) and 37: 48 & 422. 1977.

Hatschbach has found this plant in sandy soil in the shade of rocks, flowering in April.

Additional citations: BRAZIL: Minas Gerais: Hatschbach 41290 (Ld).

PAEPALANTHUS MESETICOLA Moldenke & Steyerm. ex Moldenke in Steyerm. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 281--283, fig. 3. 1976.

Additional bibliography: Moldenke in Steyerm. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 281--283, fig. 3. 1976; Steyerm. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: 199. 1976; Moldenke, *Phytologia* 37: 48. 1977.

Illustrations: Moldenke in Steyerm. & Brewer-Carías, *Bol. Soc. Venez. Cienc. Nat.* 132/133: [282]. 1976.

PAEPALANTHUS MICROCAULON Ruhl.

Additional bibliography: Moldenke, *Phytologia* 37: 48. 1977.

Additional citations: BRAZIL: Goiás: Irwin, Anderson, Stieber, & Lee 34466 (Ld).

PAEPALANTHUS MOLDENKEANUS R. E. Schult.

Additional bibliography: Moldenke, *Phytologia* 30: 87--88 (1975) and 33: 191. 1976.

Zarucchi describes this species as a showy plant, terrestrial, growing in well-drained sandy areas on savannas near rapids, where he found a "population of about 40 plants", with "white" flowers, in anthesis in September.

Additional citations: COLOMBIA: Vaupés: Zarucchi 2020 (Z).

PAEPALANTHUS MUSCOSUS Körn.

Additional bibliography: Moldenke, *Phytologia* 33: 51 (1976), 34: 257 (1976), and 38: 37. 1977.

[to be continued]